

**Site Name: Electrolux Home Products, Inc., Jefferson**

**Pre-Remedial Initial Site Screening (ISS)**

**Project Manager: John Woodland**

**Date: May 19, 2011**

***Summarize the site history (past usages, past ownerships, wastes, known or suspected contamination pathways such as tanks, septic tank/tile field, lagoon, land applications, S.W. burial, etc)***

The Electrolux Home Products, Inc. (Electrolux) site, spill number 050311-AHB-0948 is located at 601 East Central Street in Jefferson, Iowa. The site was developed in 1960 to manufacture dishwasher motor transmissions. Historical activities at the site included machining, heat treating, degreasing, metal fabrication, powder coating, warehousing, and testing of washing machine transmissions. Electrolux closed the plant in March 2011 and has since decommissioned and removed the manufacturing equipment from the site buildings.

Electrolux used five underground storage tanks (USTs) to store petroleum products, which include cooling oil, used oil, and hydraulic oil. Electrolux removed and/or closed in place all five USTs in the mid to late 1980s and 1990. On January 11, 1991, Electrolux received a No Further Action letter from IDNR regarding the UST removal activities performed in 1990.

The facility had two former aboveground degreasers and one solvent aboveground storage tank (AST). The solvent AST was located in a small building on the western side of the main site building. Multiple machine pits and trenches exist within the former manufacturing area.

***Briefly describe the site assessment that was conducted (number of borings, monitoring wells, number of samples, depth of soil samples and monitoring wells, analysis, etc.)***

On November 20 and 21, 2010, ten soil borings (MW-1 through MW-9 and boring GP-01) were advanced on the property. One soil boring (GP-01) was advanced to an approximate depth of 30 feet below ground surface (bgs). Borings MW-1 through MW-9 were advanced to depths ranging from 9 to 15 feet bgs for monitoring well installation.

Following the lithologic description, GP-01 was abandoned. Soil samples collected from MW-1 through MW-9 were field screened for the presence of volatile organic compounds (VOCs) using a photoionization detector. VOCs were not detected in soil samples MW-1 through MW-9 and therefore, these soil samples were not submitted for laboratory analysis.

On March 29 and 30, 2011, fifteen additional soil borings (MW-10 through MW-23 and MW-21A) were advanced on the site property. Borings MW-10 through MW-23 were advanced to depths ranging between 8.4 to 14.5 feet bgs for monitoring well installation. One soil sample, was collected just above the water table, from each boring along the southern manufacturing boundary (MW-10 through MW-14) for laboratory analysis. Soil samples were collected continuously from each boring advanced adjacent to the site building for laboratory analysis (i.e., five soil samples per boring: MW-15 through MW-23 and MW-21A). Boring MW-21A was abandoned after collecting the soil samples.

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The soil samples were submitted for laboratory analysis of VOCs, total extractable hydrocarbons (TEH), total petroleum hydrocarbons (TPH) as gasoline, oil and grease, and eight Resource Conservation and Recovery Act (RCRA) metals (i.e., arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver). One soil sample from each boring was also analyzed for polychlorinated biphenyls (PCBs).

Monitoring wells were installed in soil borings MW-1 through MW-9 and soil borings MW-10 through MW-23. Groundwater samples were collected from wells MW-5, MW-6, MW-7, MW-9, MW-11 through MW-13 and MW-15 through MW-23. Water levels could not be measured or groundwater samples collected from monitoring wells MW-10 and MW-14 due to standing water over the wells. Groundwater was encountered in the remaining wells between 1.07 to 8.25 feet bgs.

Groundwater samples were submitted for analysis of VOCs and TEHs. One groundwater sample was collected from monitoring well MW-21 for analysis of PCBs.

***Summarize the findings and conclusions regarding the contaminants found and their extent and concentrations. Relate those values to known criteria such as statewide standards, MCLs, water quality standards, background levels or other benchmarks used to determine site priority.***

The soil analytical results are provided in Appendix A, Table 1. Key findings include the following:

- No TEH, VOCs, or TPH gasoline constituents were detected in soil samples collected from the soil borings advanced along the southern manufacturing boundary of the site (MW-10, MW-11, MW-12, MW-13, and MW-14) at concentrations above the laboratory reporting limits. Barium, chromium, lead and arsenic were detected at concentrations consistent with background conditions and oil and grease concentrations at less than 170 milligrams per kilogram (mg/kg).
- Mercury was detected at concentrations just above the laboratory reporting limits in soil samples collected from MW-16, MW-20, MW-21, MW-21A, MW-22, and MW-23. Arsenic, barium, chromium, and lead were detected at concentrations above the laboratory reporting limits at concentrations consistent with background concentrations.
- TPH as gasoline was detected in soil samples collected from soil borings MW-19, MW-21, MW-21A, and MW-22 at concentrations above the laboratory reporting limits. The highest TPH gasoline concentrations were detected in samples collected from the five to ten foot depth interval. The TPH gasoline concentrations decreased with depth and were non-detect in samples collected below 10 feet bgs with the exception of MW-21 (15.3 mg/kg) at 10-12 feet bgs. There are currently no statewide standards for TPH constituents.
- Oil and grease were detected at concentrations above the laboratory reporting limits in most of the soil samples and detected at the highest concentrations (i.e., above 1,000 mg/kg) in soil samples collected from borings MW-17, MW-21, MW-21A, and MW-23. There are currently no statewide standards for oil and grease.
- TEH as diesel was detected above the Iowa Tier 1 Look-Up Table, Soil Leaching to Groundwater of 3800 mg/kg in MW-21 at a concentration of 6,150 mg/kg.

- Chlorinated volatile organic compounds (CVOCs) including trichloroethene (TCE) and 1,1,1 trichloroethane (1,1,1-TCA) were detected in all the soil borings located adjacent to the south side of the site building. The highest detected concentrations of TCE and 1,1,1-TCA were located on the southeastern corner of the manufacturing building (i.e., MW-15, MW-16, MW-17, MW-18, and MW-19). TCE was detected in a soil sample from boring MW-19 (10-12' bgs) at a concentration of 159,000 ug/kg. The statewide standard for TCE in soil is 7,700 ug/kg.
- PCBs were not detected in any of the analyzed soil samples at concentrations above the laboratory reporting limits.

The groundwater analytical results are provided in Appendix A, Table 2. Compounds detected at concentrations above IDNR Statewide Standards for a Protected Groundwater Source are shown in bold. Key findings include the following:

- No VOCs were detected in groundwater samples collected from the monitoring wells installed along the southern manufacturing boundary of the site (MW-5, MW-6, MW-9, MW-11, and MW-13) at concentrations above the laboratory reporting limits with the exception of MW-7 where 1,1,1-TCA and 1,1-dichloroethane (1,1-DCA) were detected at concentrations above the laboratory reporting limits, but below statewide standards.
- TCE was detected at concentrations above the statewide standard of 5 ug/L in groundwater samples collected from monitoring wells along the southeastern corner of the site building (MW-15, MW-16, MW-17, MW-18, MW-19, and MW-20). The highest concentration of TCE was detected in MW-19 at a concentration of 189,000 ug/L.
- Other chlorinated VOCs detected at concentrations above their respective statewide standards include:
  - 1,1,1-Trichloroethane
  - 1,1,2-Trichloroethane;
  - 1,1-dichloroethene;
  - 1,2-dichloroethane;
  - Vinyl chloride;
  - Cis-1,2-dichloroethene;
  - Tetrachloroethene (PCE).
- Elevated TEH as diesel and TEH as waste oil (motor oil) concentrations were detected above the Iowa Tier 1 Look-Up Table, Groundwater Ingestion Actual in wells MW-9, MW-21, MW-22, and MW-23. The standards for TEH as diesel and TEH as waste oil (motor oil) are 1200 ug/L and 400 ug/L, respectively. The highest concentrations of TEH as diesel and TEH as waste oil (motor oil) were detected in MW-21 at 36,000 ug/L and 65,700 ug/L, respectively. TEH as gasoline was also detected at elevated levels in several of the wells. There is no statewide standard for TEH as gasoline in groundwater.
- PCBs were not detected in the groundwater sample collected from MW-21 at concentrations above the laboratory reporting limits.

*Identify on-site or off-site potential and actual targets (e.g., municipal wells, private wells, drinking water intakes). What is known of the neighboring area, i.e., are there residences, businesses, public use areas, etc.? Are there utility lines that could be impacted by site contaminants? Identify any other use/location issues that deserve consideration.*

There are no wells located on the site and no wells within a quarter-mile radius. Within a half-mile radius, there is one shallow well (exact depth unknown) used for a residential heat pump and one plugged well.

***Rate the site on a scale of 1 to 4, in decreasing order of severity or priority.***

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***Summarize the reasoning, knowledge or any other information used in determining your recommendation regarding the priority assigned to this site.***

TEH as diesel was detected in a soil sample collected from boring MW-21 (5 to 10 feet bgs) at a concentration of 6,150 mg/kg. The Iowa Tier 1 Look-Up Table, Soil Leaching to Groundwater standard is 3800 mg/kg. This soil sample was taken within the groundwater table.

TCE was detected in a soil sample collected from boring MW-19 (10 to 12 feet bgs) at a concentration of 159,000 ug/kg. The statewide standard for TCE in soil is 7,700 ug/kg. This soil sample was taken within the groundwater table.

TEH as diesel was detected above the Iowa Tier 1 Look-Up Table, Groundwater Ingestion Actual of 1200 ug/L in groundwater collected from the following wells:

MW-9; 1,390 ug/L

MW-21; 36,000 ug/L

MW-22; 10,300 ug/L

MW-23; 3,120 ug/L

TEH as waste oil (motor oil) was detected above the Iowa Tier 1 Look-Up Table, Groundwater Ingestion Actual of 400 ug/L in groundwater collected from the following wells:

MW-9; 514 ug/L

MW-21; 65,700 ug/L

MW-22; 1,240 ug/L

MW-23; 440 ug/L

1,1,1-Trichloroethane was detected above the IDNR Statewide Standard for a Protected Groundwater Source of 200 ug/L in groundwater collected from the following wells:

MW-19; 4,590 ug/L

MW-21; 483 ug/L

1,1,2-Trichloroethane was detected above the IDNR Statewide Standard for a Protected Groundwater Source of 5.00 ug/L in groundwater collected from MW-19 at a concentration of 35.1 ug/L.

1,1-Dichloroethane was detected above the IDNR Statewide Standard for a Protected Groundwater Source of 140 ug/L in groundwater from MW-22 at a concentration of 292 ug/L.

1,1-Dichloroethene was detected above the IDNR Statewide Standard for a Protected Groundwater Source of 7.00 ug/L in groundwater collected from MW-19 at a concentration of 3,750 ug/L.

1,2-Dichloroethane was detected above the IDNR Statewide Standard for a Protected Groundwater Source of 5.00 ug/L in groundwater collected from MW-19 at a concentration of 8.91 ug/L.

cis-1,2-Dichloroethene was detected above the IDNR Statewide Standard for a Protected Groundwater Source of 70 ug/L in groundwater collected from MW-19 at a concentration of 120 ug/L.

Tetrachloroethene (PCE) was detected above the IDNR Statewide Standard for a Protected Groundwater Source of 5.00 ug/L in groundwater collected from MW-19 at a concentration of 548 ug/L.

Trichloroethene was detected above the IDNR Statewide Standard for a Protected Groundwater Source of 5.00 ug/L in groundwater collected from the following wells:

MW-16; 223 ug/L

MW-17; 11.2 ug/L

MW-18; 76.3 ug/L

MW-19; 189,000 ug/L

MW-20; 13.3 ug/L

Vinyl Chloride was detected above the IDNR Statewide Standard for a Protected Groundwater Source of 2.00 ug/L in groundwater collected from MW-22 at a concentration of 3.64 ug/L.

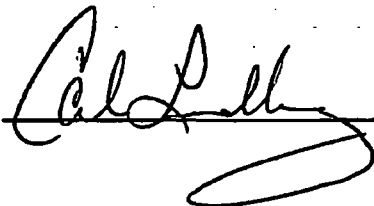
Some of the contaminants detected appear to present a significant risk at this time.

There will be no further action under CERCLA. Depending on the actions of the EPA on this site, the Iowa DNR may require additional corrective action under State Authority. This site has been referred to EPA, RCRA due to the contamination found onsite. On June 2nd, 2011, Ms. Lynn M. Slugantz, Chief, RCRA Corrective Action and Permits Branch, Air & Waste Management Division, US EPA Region 7 indicated the EPA will act under their authority.

Site recommended for:

- ☒ No further action
- ☐ Additional investigation under state program (activity code 2824)
- ☐ Additional investigation under CERCLA (Extended Site Screening)
- ☐ Additional investigation by responsible party
- ☐ Transfer to LUST/UST

Form Reviewed:



Date Reviewed:

9/2/11